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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,044	08/16/2006	Paul A. Stucky	60469-122PUS1; 000.05297-	9489
26096 7590 05/04/2009 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			EXAMINER CHAN, KAWING	
			ART UNIT 2837	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,044	<b>Applicant(s)</b> STUCKY ET AL.	
	<b>Examiner</b> Kawing Chan	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/16/06 and 12/20/07</u> .                                   | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statements (IDS) submitted on 08/16/06 and 12/20/07 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by examiner.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 6-8, 13, 14, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Blain et al. (US 4,785,914).

In Re claims 1 and 8, Robar discloses a device and a method of monitoring a condition of an elevator load bearing member (602; i.e. steel cord and multi-cord rope) that has a plurality of spaced, electrically conductive tension members (Page 8 lines 20-32 & Page 9 lines 24-31), comprising the steps of applying a selected electric signal (current) comprising a plurality of pulses to at least one of the tension members (Page 8 line 20 to Page 9 line 31). Although Robar does not explicitly disclose the electric current comprises a plurality of pulses, it would have been obvious to one skilled in the

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art that electric current could be expressed in the form of sinusoidal wave or square wave signal.

Robar fails to disclose the electric signal having a duty ratio that is less than 10%.

However, Blain discloses electric signal having a duty ratio that is less than 10% (Col 14 lines 14-20).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar with the teachings of Blain, since it is known in the art to utilize a pulse width modulator to control the duty cycle of an input signal so as to be able to control the current supply.

In Re claims 16 and 20, Robar discloses an elevator load bearing assembly (Figure 10), comprising:

- A plurality of electrically conductive tension members ((602; i.e. steel cord and multi-cord rope) (Page 8 lines 20-32 & Page 9 lines 24-31);
- A non conductive jacket (non-conductive insulator material: polyurethane) generally surrounding the tension members (Page 8 lines 20-26); and
- A controller (612) that selectively applies an electric signal (current) comprising a plurality of pulses to at least one of the tension members (Page 8 line 20 to Page 9 line 31). Although Robar does not explicitly disclose the electric current comprises a plurality of pulses, it would have been obvious to one skilled in the art that electric current could be expressed in the form of sinusoidal wave or square wave signal.

Robar fails to disclose the electric signal having a duty ratio that is less than 10%.

However, Blain discloses electric signal having a duty ratio that is less than 10% (the duty ratio is changeable between 0 and 95%) (Col 14 lines 14-20).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar with the teachings of Blain, since it is known in the art to utilize a pulse width modulator to control the duty cycle of an input signal so as to be able to control the current supply.

In Re claim 2, with reference to Figure 9, Robar discloses applying the signal (current) to one of the tension members (602) at a time.

In Re claims 6 and 13, Robar discloses the electric signal (current) is applied only to non-adjacent tension members (cords of a rope) at a time (Page 9 lines 24-28). Although Robar does not explicitly discloses the current signal is applied to non-adjacent tension members, it would have been obvious to one skilled in the art to choose any two or more of the cords inside the rope to compare the result (the selected cords could be not located next to each other). Since all the claimed elements were known in the prior art and one skilled in the art could have combined the claimed elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention was made.

In Re claims 7 and 14, Robar discloses determining a resistance of the tension members and a condition of the load bearing member based upon the applied signal (Page 8 line 20 to Page 9 line 31).

4. Claims 3, 9, 10, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Blain et al. (US 4,785,914) as applied to claims 1, 8 and 16 above, and further in view of Clarke et al. (US 2002/0194935 A1).

In Re claims 9 and 17, Robar and Blain have been discussed above, but they fail to disclose a connector that establishes an electrically conductive connection between the controller and the tension members.

However, with reference to Figure 1, Clarke discloses a connector (201, 202, 12) that establishes an electrically conductive connection between the controller (V) and the tension members (10).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Blain with the teachings of Clarke, since it is known in the art to utilize jumpers to couple multiple tension members together so as to be able to detect the overall resistance of the tension members.

In Re claims 3, 10 and 18, Robar and Blain have been discussed above, but they fail to disclose coupling at least two non-adjacent tension members in an electrically conductive manner.

However, with reference to Figures 1 and 2, Clarke discloses coupling at least two tension members (10) in an electrically conductive manner and applying the electric signal (current) to the coupled tension members (Abstract; Paragraphs [0015-0018, 0025, 0026]). With reference to Figure 1, six tension members (10) are coupled together in series by jumpers (12). The far left tension member is coupled to the second left tension member (adjacent) and to the rest of the tension members (non-adjacent). Based on the principle of broadest reasonable interpretation, “coupling at least two non-adjacent tension members” does not exclude the coupling of adjacent tension members. In addition, Clarke intends to connect all the tension members (10) in series by using jumpers (12), and rearranging the jumpers to couple tension members with non-adjacent members only and connect all the tension members in a series connection would be within the skill in the art.

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Blain with the teachings of Clarke, since it is known in the art to utilize jumpers to couple multiple tension members together so as to be able to detect the overall resistance of the tension members.

In Re claim 15, with reference to Figure 1, Clarke discloses the controller (V) applies the signal (current) to an entire plurality of tension members (10) simultaneously (since all the tension members are connected together in series by jumpers).

5. Claims 4, 5, 11, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robar (WO 00/58706) in view of Blain et al. (US 4,785,914) as

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applied to claims 1, 8 and 16 above, and further in view of Brucken et al. (US 5,338,417).

In Re claims 4 and 11, Robar and Blain have been discussed above, but they fail to disclose the tension member carrying the signal as a cathode relative to a hoistway where the belt assembly is used.

However, Brucken discloses the tension member (steel pipe encases a high tension power line) carrying the signal as a cathode (negative voltage) relative to ground (Col 2 lines 24-33).

Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to have modified the teachings of Robar and Blain with the teachings of Brucken, since it is known in the art to utilize the technique of cathodic protection so as to be able to control the corrosion of a metal surface by making that surface as cathode.

In Re claims 5, 12 and 19, Brucken discloses controlling a potential of the electric signal (negative voltage) such that the potential is negative compared to the ground (Col 2 lines 24-33).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Russell, Stucky et al., Olsen et al., Ayano et al., Hawkes et al., Robar et al. and Heinz et al. are further cited to show related teachings in the art.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kawing Chan whose telephone number is (571)270-3909. The examiner can normally be reached on Mon-Fri 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BENTSU RO/  
Primary Examiner, Art Unit 2837

Kawing Chan  
Examiner  
Art Unit 2837